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| --- | --- |
| **Microprocessors Systems**  **CMPS-201** | **Cairo University**  **Faculty of Engineering**  **Computer Engineering Department** |

**Sheet 2 Template**

**Question 3**

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| --- |
|  |

After the execution of **PUSHF**, the **SP** =

The contents of the stack are after **PUSHF** are:

|  |  |
| --- | --- |
| **Address** | **Content** |
| 1288 | N/A |
|  |  |
|  |  |
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|  |  |

To restore the contents of the registers, we use these instructions:

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| --- | --- | --- |
| Instruction | **SP** after the execution of the instruction | |
|  |  | |
|  |  | |
|  |  | |
|  |  | |
|  |  | |
|  |  | |
|  |  | |
| The instruction that pushes all registers in one go is | | |  | | --- | |  | |
| The instruction that pops all registers at once | | |  | | --- | |  | |

**Question 4**

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| --- | --- |
| The syntax errors in the program are: | The logical errors in this program are: |

**Question 5**

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| --- | --- | --- | --- | --- | --- |
| Code | Result Stored In | Result | CF | ZF | AF |
| MOV BH,3FH  ADD BH,45H |  |  |  |  |  |
| MOV BX,0FF01H  ADD BL,BH |  |  |  |  |  |
| MOV AH,0FEH  STC  ADC AH,00 |  |  |  |  |  |
| MOV DX,4599H  MOV CX,3458H  ADD CX,DX |  |  |  |  |  |
| MOV AX,255  STC  ADC AX,00 |  |  |  |  |  |
| MOV CX,0FFFFH  STC  ADC CX,00 |  |  |  |  |  |

**Question 6**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Code | Result Stored In | Result (HEX) | ZF | CF |
| AND DX, AX |  |  |  |  |
| XOR AL, 76H |  |  |  |  |
| XOR AX, AX |  |  |  |  |
| AND AH, 0FFH |  |  |  |  |
| XOR DX, 0EEEEH |  |  |  |  |
| MOV CL, 04  SHL AL, CL |  |  |  |  |
| MOV CL, 3  SHR DL, CL |  |  |  |  |
| MOV CL, 6  SHL DX, CL |  |  |  |  |

**Question 7**

|  |  |  |
| --- | --- | --- |
| **Code** | **ZF** | **CF** |
| MOV BX,2500  CMP BX,1400 |  |  |
| SUB AX, AX  CMP AX,0000 |  |  |
| MOV DL,34  CMP DL,88 |  |  |
| MOV AL,0FFH  CMP AL,6FH |  |  |
| XOR DX, DX  CMP DX,0FFFFH |  |  |
| MOV BX,2378H  MOV DX,4000H  CMP DX, BX |  |  |
| SUB CX, CX  DEC CX  CMP CX,0FFFFH |  |  |
| MOV AL,0AAH  AND AL,55H  CMP AL,00 |  |  |

**Question 8**

Case A:

Case B:

Case C: